



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 20, 2014

Site Vice President
Entergy Nuclear Operations, Inc.
Vermont Yankee Nuclear Power Station
P.O. Box 250
Governor Hunt Road
Vernon, VT 05354

SUBJECT: VERMONT YANKEE NUCLEAR POWER STATION - REQUEST FOR
ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT
REQUEST FOR PERMANENTLY DEFUELED EMERGENCY PLAN CHANGE
(TAC NO. MF4279)

Dear Sir or Madam:

By letter dated June 12, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession Number No. ML14168A302), Entergy Nuclear Operations, Inc. (Entergy) requested a license amendment to the Vermont Yankee Nuclear Power Station (VY) Emergency Plan, hereafter referred to as the Permanently Defueled Emergency Plan (PDEP), and emergency action level (EAL) scheme. Entergy requests the U.S. Nuclear Regulatory Commission's (NRC's) review and approval of the VY PDEP and EAL scheme to reflect the permanently defueled condition of VY after it ceases operations as stated in the letter dated September 23, 2013, (ADAMS Accession No. ML13273A204) and implements the emergency planning exemptions, if granted, as requested in letter dated March 14, 2014, (ADAMS Accession No. ML14080A141).

The NRC staff has reviewed the license amendment request, using the guidance contained in NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants" (November 1980), as applicable to support an emergency plan for a permanently shut down and defueled power reactor facility with spent fuel stored in a spent fuel pool or an independent spent fuel storage installation.

The NRC staff has determined that additional information is required to facilitate our further technical review and to ensure that the staff can reach a reasonable assurance finding in accordance with 10 CFR 50.47(a)(1)(i).

- 2 -

The specific questions are found in the enclosed request for additional information (RAI). Based on our discussions on October 8, 2014, we understand that a response to the RAI will be provided by November 28, 2014. If you have any questions regarding this letter, please contact James Kim at (301) 415-4125.

Sincerely,

A handwritten signature in black ink that reads "James Kim". The signature is fluid and cursive, with the first name "James" and last name "Kim" clearly distinguishable.

James Kim, Project Manager
Plant Licensing Branch IV-2 and Decommissioning
Transition branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure:
As stated

cc w/encl: Distribution via ListServ

REQUEST FOR ADDITIONAL INFORMATION
REGARDING AMENDMENT REQUEST FOR
PERMANENTLY DEFUELED EMERGENCY PLAN CHANGE
ENTERGY NUCLEAR OPERATIONS, INC.
VERMONT YANKEE NUCLEAR POWER STATION
DOCKET NOS. 50-271

The following request for additional information (RAI) applies to Attachment 2, "Permanently Defueled Emergency Plan [PDEP]," of Entergy's submittal dated June 12, 2014, (Agencywide Documents Access and Management System (ADAMS) Accession Number No. ML14168A302).

VY-RAI-01

Please provide a section cross-reference between the Vermont Yankee Nuclear Power Station (VY) PDEP and NUREG-0654/ FEMA-REP-1 to assist the U.S. Nuclear Regulatory Commission (NRC) staff in verifying that applicable evaluation criteria are consistent with the proposed exemptions.

VY-RAI-02

Section 1.0,"Introduction" of the PDEP inaccurately states, "The analysis of the potential radiological impact of an accident in a permanently defueled condition indicates that *any* [italics added] releases beyond the Site Boundary are below the Environmental Protection Agency's (EPA's) Protective Action Guide (PAG) exposure levels...." Please clarify that this statement applies to site-specific analyses provided for applicable "design-basis-accidents" not exceeding EPA PAGs at the site boundary, or provide technical justification that a spent fuel fire, if it were to occur, would not exceed EPA PAGs at the site boundary. While unlikely, consideration is still given as an exemption for the possibility of a spent fuel fire that offsite government officials may determine warrants implementation of a protective action for the public in the vicinity of the VY facility.

In addition, Section 1.2, "Scope" inaccurately states, "Because there are no postulated accidents that would result in dose consequences that are large enough to require offsite emergency planning..." Please clarify that site-specific analyses are provided for applicable "design-basis-accidents" not exceeding EPA PAGs at the site boundary and whether comprehensive (all hazards) emergency management planning may be used by offsite government officials to implement protective measures for the public as deemed warranted.

Enclosure

VY-RAI-03

VY's current Emergency Plan provides the following information in Section 3.5, "State Government Notification and Response":

Vermont Yankee is responsible for conveying specific accident information, radiological assessment information, and protective action recommendations to the State of Vermont, State of New Hampshire, and Commonwealth of Massachusetts.

VY's exemption request, dated March 14, 2014, (ADAMS Accession No. ML14080A141) requested the following:

E.9.a. Provision for communications with *contiguous* [italics added] State/local governments ~~within the plume exposure pathway EPZ~~. Such communications shall be tested monthly.

Sections 3.1, "Overview of Permanently Defueled Emergency Plan" and 3.6, "State and Local Government Notification and Response" of the PDEP provide no reference to interfaces with the State of New Hampshire and the Commonwealth of Massachusetts. Please provide documentation that the State of New Hampshire and the Commonwealth of Massachusetts have agreed that they no longer require notification from the VY in the event of a declared emergency or revise to address these notifications. Notification of other contiguous States also needs to be addressed in Section 3.3(5) and Figure 9.1, "Notification Plan" of the PDEP.

VY-RAI-04

Section 3.1 (3rd paragraph) inaccurately states, "Because there are not postulated accidents that would result in off-site dose consequences large enough to require off-site emergency planning..." The NRC's evaluation of requested exemptions can consider credit for comprehensive (all hazards) emergency management planning, if needed, for an unlikely spent fuel fire or at the judgment of offsite government officials. Elimination of the Site Area and General Emergency classifications is based on analyses of applicable design-basis-accidents. Please revise accordingly to reflect that the capability exists to implement offsite protective action for the public, if needed, based on the judgment of offsite government officials using comprehensive (all hazards) emergency management planning.

Additionally, in the unlikely event that there is a catastrophic loss of spent fuel pool (SFP) water inventory, there is a potential for an offsite release of radioactive material, although they may be a small fraction of the EPA PAG. Please provide further discussion on how the interfaces with State and local government agencies would be performed to support an offsite protective action decision, if deemed appropriate by respective government authority.

VY-RAI-05

Section 3.8, "Technical Support" of the PDEP states (in part), "augmentation... can be requested from various contractors." Please specify what functions are relied on in the PDEP for contractor support and identify whether contracts or letters of agreement are in-place with these contract organizations for response during an emergency at the VY facility.

VY-RAI-06

Please provide an estimate of the time frame required to implement the SFP mitigation strategies outlined in Section 3.9 "Mitigation of Consequences of Beyond Design Basis Events" using designated on-shift personnel trained and available to perform these actions.

VY-RAI-07

NRC evaluation of exemption request in SECY-14-0066 considered that in the unlikely event of a beyond design-basis-accident, resulting in a radiological release due to a postulated zirconium fire, early offsite protective measures could be implemented. Section IV.B.1 to Appendix E of Part 50 still requires that the licensee have the means to determine the magnitude of, and for continually assessing the impact of, a release of radioactive materials. However, no reference to any type of dose assessment is provided in Section 6.0, "Emergency Response Facilities and Equipment" of the PDEP. Please describe in Section 6.0 of the PDEP on how VY addresses the capabilities to perform dose assessment to assess the magnitude of a potential radiological release.

VY-RAI-08

Section 6.2.1, "Process Monitors" of the PDEP states, "Annunciator and computer alarms are provided for a variety of parameters including SFP cooling to indicate SFP level, temperature and pump status." Please clarify what specific parameters reflecting SFP cooling and level status will continue to be available in the Control Room in support of prompt classification and implementation of mitigation measures, if needed.

VY-RAI-9

Clarify whether meteorological parameters, discussed in Section 6.2.1, "Meteorological Capability" of the PDEP, are available in the Control Room and are adequate to support dose assessment activities.

VY-RAI-10

Section 7.3, "Emergency Response Organization [ERO] Notification System" of the PDEP identifies the ERO Notification System as the primary means of activating the ERO upon declaration of an emergency, but provides no description of system capabilities. Please describe the capabilities and communications methods used by the ERO Notification Systems to provide for the timely notification and augmentation of ERO personnel.

VY-RAI-11

Table 7.1, "Vermont Yankee Emergency Communication Matrix" of the PDEP provides reference to the Southwest Fire Radio. Is this radio tested on a set frequency similar to all of the other communications devices, as listed in Section 12.1.2, "Communications Tests"? In addition, please clarify why the Southwest Fire Radio is not described in Section 7.0, Communications, but is listed on Table 7.1 as a backup means of communication with the State Emergency Operations Centers.

VY-RAI-12

Please describe the alternate external telephone line arrangement, described in Section 7.7, "Commercial Telephone System" of the PDEP, to address telephone equipment blockage in the local area. Is this referring to "microwave" communications listed in Section 7.8, "Emergency Power Supply for Communications"?

VY-RAI-13

Section 7.8 of the PDEP states, "All emergency communications (including all phones) located within the plant are connected to an emergency or redundant supply. Please describe the power source and duration for these emergency or redundant supplies.

VY-RAI-14

Plan objective #5, listed in Section 3.2, "Objectives" of the PDEP, is to "establish an engineering support organization to aid the plant personnel in limiting the consequences of and recovery from an event." However, this is not addressed in Section 8.2, "Emergency Response Organization", or specifically Section 8.2.4, "Recovery Organization" of the PDEP. Please describe how this plan objective is under the PDEP.

VY-RAI-15

Section 8.2.4 of the PDEP provides a general overview of recovery expectations. Please describe the position/title, authority and responsibilities of individuals who will fill key positions in the facility recovery organization, including technical personnel with responsibilities to develop, evaluate and direct recovery and reentry operations, consistent with NUREG-0654/ FEMA-REP-1 Evaluation Criterion M.2.

VY-RAI-16

In reference to Table 8.1, "Minimum On-Shift and ERO Staffing Requirements" of the PDEP, please response to the following:

- a. Has VY performed an on-shift analysis for ERO functions to ensure sufficient personnel will be able to respond to the limiting event, which is a catastrophic loss of SFP water inventory, using the minimum shift staffing as indicated in the Table 8.1, to verify that a

SFP mitigation strategy can be promptly implemented using available on-shift personnel? The response should include:

- SFP mitigation strategies as described in Section 3.9 of the PDEP, and
- All functional areas of the Table B-1 to address any potential collateral duties.

Additionally, provide an update to Table 8.1 reflecting the on-shift personnel required to perform mitigation strategies for a catastrophic loss of SFP inventory.

VY-RAI-17

Sections 5.0, "Emergency Classification System" and 9.1, "Emergency Condition Recognition and Classification" of the PDEP state (in part), "VY maintains the capability to assess, classify, and declare an emergency condition in accordance with site procedures...." Please identify a specific time frame, and supporting technical justification, where VY will maintain the capability required for the prompt classification of an emergency condition, based on the permanent shutdown and defueled condition of the facility, or provide a copy of the site procedure that provides this information.

VY-RAI-18

Section 10.1.1, "Initial Radiological Dose Projection" of the PDEP provides that VY has developed a method to quickly determine the projected radiological conditions at the site boundary. Please provide further information on how this dose projection is performed using on-shift staffing identified in Table 8.1, and include a copy of the applicable implementing procedure.

VY-RAI-19

Section 10.3.1, "Site Personnel Accountability" of the PDEP provides that the goal of the personnel accountability process is to account for personnel at an Alert declaration. Please clarify in the PDEP how the following NUREG-0654/FEMA-REP-1 evaluation criterion is addressed or provide justification for why criteria are no longer considered applicable:

[J.5] Each licensee shall provide for a capability to account for all individuals onsite at the time of the emergency and ascertain the names of missing individuals within 60 minutes of the start of an emergency and account for all onsite individuals continuously thereafter,

In addition, describe the communication means intended to notify site personnel of accountability, since Section 7.5 of the PDEP only identifies that the Plant Intercom System is located in "many areas" throughout the plant.

VY-RAI-20

Section 10.3.3, "Decontamination Capability" of the PDEP is limited to a general discussion of personnel monitoring and decontamination. Please describe how, or where, NUREG-0654/FEMA-REP-1 Evaluation Criteria K.5.a and K.6 are addressed for decontamination and on-site contamination control.

VY-RAI-21

Section 10.4.1, "Medical Treatment" of the PDEP provides that initial on-site medical treatment is provided by on-site personnel. Please provide further information on who these personnel are (e.g., on-shift, duty performed as a collateral function), and what level and frequency of training are they giving.

VY-RAI-22

Section 10.5, "Protective Actions for Onsite Personnel" of the PDEP states, "A range of protective actions to protect onsite personnel and how they will ensure continued ability to perform the functions of the emergency plan." Please describe this intended range of protective actions to protect onsite personnel and how they will ensure continued ability to perform the functions of the emergency plan, or provide reference to and a copy of applicable implementing procedure.

VY-RAI-23

Section 11.1, "Emergency Notification" of the PDEP states, "The format and contents of the initial message between the plant and State authorities are specified in notification procedures and have been established with the review and agreement of responsible state authorities." Please provide documentation that this commitment has been reviewed with responsible state authorities to address the permanent shut down and defueled condition of the facility. In addition, has the frequency and format/content of follow-up reports been discussed with responsible state authorities based on the requested change in notification time requirements and the permanently shut down and defueled condition of the facility?

VY-RAI-24

Section 11.2, "Public Information" of the PDEP refers to the dissemination of information during an event at VY. Please explain how the following NUREG-0654/FEMA-REP-1 evaluation criteria are addressed under the Entergy Corporate Communication protocols:

- [G.4.a] Designated spokesperson, which should have access to all necessary information;
- [G.4.b] Arrangements for the timely exchange of information among designated company/agency spokespersons; and
- [G.4.c] Coordinated arrangements for dealing with rumors.

Additionally, please clarify how Entergy corporate communications protocols will continue to support the capability of Federal, State and local emergency response organizations to disseminate appropriate information regarding an emergency at VY.

VY-RAI-25

Please clarify why the following offsite support organizations listed in Appendix D, "Letters of Agreement" of the PDEP are not provided the opportunity to participate in biennial exercises or periodic drills, as described in Section 12.1.1, "Radiation Emergency Exercises and Drills" of the PDEP:

- Vernon Fire Department, and
- Town of Vernon.

VY-RAI-26

Please clarify why Section 12.1.4, "Fire Drills" of the PDEP only lists the Vernon Fire Department for demonstration of coordination with the plant's fire brigade, but does not address participation by the Brattleboro Fire Department, which is listed as an off-site support organization in Appendix D, "Letters of Agreement" of the PDEP.

VY-RAI-27

Please clarify whether the Medical Drills, as discussed in Section 12.1.5 of the PDEP, will involve the actual participation of the Brattleboro Memorial Hospital and Rescue Inc. Ambulance Service, as off-site support organizations listed in Appendix D of the PDEP.

VY-RAI-28

Under Section 12.2, "Training" of the PDEP, please describe site-specific emergency response training for those offsite emergency organizations that may be called upon to provide assistance in the event of an emergency, as outlined in NUREG-0654/FEMA-REP-1 Evaluation Criteria O.1.a.

VY-RAI-29

Please provide copies of Emergency Plan Training Procedure AP 3712 and the Emergency Plan Training Program Description, as referenced in Section 12.2 of the PDEP, which describes specific details of the training given on an annual basis.

VY-RAI-30

Under Section 12.5, "Responsibility for Planning Effort" of the PDEP, describe how training is provided to individuals responsible for the planning effort, per NUREG-0654/FEMA-REP-1 Evaluation Criteria P.1.

VY-RAI-31

Appendix B, "Emergency Equipment Inventory" lists specific radiological monitoring instruments/equipment, but merely indicates that it be provided by other non-affected Entergy nuclear sites, as needed. Please list what procedures are in place to coordinate obtaining/transporting or remotely utilizing this equipment, and describe an estimated time frame when equipment would become available for use in support of an emergency at the VY facility.

VY-RAI-32

Appendix D of the PDEP discusses various active and in-force letters of agreement with various offsite support organizations. Please provide copies for staff review of letters of agreement applicable to this proposed PDEP, which will be in-force upon VY's permanent cessation of operations.

The following RAIs are for Attachment 3, "Permanently Defueled Emergency Action Level Technical Bases," of Entergy's June 12, 2014 submittal:

VY-RAI-33

Please annotate in Section 1, "Purpose" whether this document will be maintained in accordance with 10 CFR 50.54(q).

VY-RAI-34

[Page 32 of 51] EAL PD,"[Permanently Defueled" AU-2.2, basis discusses that if the area radiation monitors cannot detect or display values at or above 25 mR/hr over normal, then survey instruments can be used.

- Verify whether the ranges of ARM-14, "Rx Bldg West Refuel" and ARM-15, "Spent Fuel Pool" are capable of detecting and displaying radiation levels at or above 25 mR/hr over normal.
- Which area radiation monitors are known to not be capable of detecting or displaying values at or above 25 mR/hr over normal?
- What would be the timeliness of performing local radiation surveys?

VY-RAI-35

[Page 51 of 51] EAL E, "Independent Spent Fuel Storage Installation" HU-1.1 basis provides the actual EAL values. Please explain why these values are not provided in the EAL itself to allow for timely event classification.

The specific questions are found in the enclosed request for additional information (RAI). Based on our discussions on October 8, 2014, we understand that a response to the RAI will be provided by November 28, 2014. If you have any questions regarding this letter, please contact James Kim at (301) 415-4125.

Sincerely,

/RA/

James Kim, Project Manager
Plant Licensing Branch IV-2 and Decommissioning
Transition branch
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure:
As stated

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